

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
5 January 2006 (05.01.2006)

PCT

(10) International Publication Number  
**WO 2006/000410 A3**

(51) International Patent Classification:  
**G06F 19/00** (2006.01)

(21) International Application Number:  
PCT/EP2005/006795

(22) International Filing Date: 23 June 2005 (23.06.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
PCT/EP2004/006781 23 June 2004 (23.06.2004) EP

(71) Applicants (*for all designated States except US*): BAYER BIOSCIENCE N.V. [BE/BE]; Technologiepark 38, B-9052 Gent (BE). BAYER CROPSCIENCE S.A. [FR/FR]; 16 rue Jean-Marie Leclair, F-69009 Lyon (FR). COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION [AU/AU]; Limestone Avenue, Cambell, ACT 2601 (AU).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): BOUROT, Stéphane [FR/FR]; 16 rue Robert Desnos, F-77370 Nangis (FR). GIGONZAC, Olivier [FR/FR]; 114 ter rue de Silly, F-92100 Boulogne-Billancourt (FR). METZLAFF, Michael [DE/BE]; Irislaan 26, B-3080 Tervuren (BE). WATERHOUSE, Peter [AU/AU]; 5 Banjine Street, O'Connor, Canberra, ACT 2602 (AU). HELLIWELL, Christopher [AU/AU]; 167 Wattle Street, O'Connor, Canberra, ACT 2602 (AU).

(74) Agents: BRANTS, Johan, Philippe, Emile et al.; De Clercq, Brants & Partners CV, E. Gevaertdreef 10A, B-9830 Sint-Martens-Latem (BE).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report

(88) Date of publication of the international search report:  
12 October 2006

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: METHOD FOR IDENTIFYING NUCLEIC CAPABLE OF MODULATING A GENE IN A BIOLOGICAL SYSTEM

(57) Abstract: The present invention relates to a method for identifying one or more regions of a gene of interest which are suitable targets for modulating in a biological system of interest. Said regions enable specific targeting of a gene, or of a family of genes, while minimising any effects on other genes in the biological system. The invention further relates to a computer program and a kit therefor.

WO 2006/000410 A3

# INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2005/006795

## A. CLASSIFICATION OF SUBJECT MATTER

INV. G06F19/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/038278 A1 (TZERTZINIS GEORGE ET AL) 26 February 2004 (2004-02-26) abstract paragraph [0108] - paragraph [0113] paragraph [0119] - paragraph [0120] paragraph [0202] - paragraph [0208] paragraph [0237] - paragraph [0238] -----	1-19, 25-34
X	US 2004/072769 A1 (YIN JAMES QINWEI) 15 April 2004 (2004-04-15) abstract; claims 1-7 paragraph [0049] - paragraph [0052] paragraph [0058] - paragraph [0060] paragraph [0065] - paragraph [0071] paragraph [0078] - paragraph [0081] ----- -/--	1-19, 25-34



Further documents are listed in the continuation of Box C.



See patent family annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the International search

27 December 2005

Date of mailing of the international search report

05-07-2006

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Türkeli, Y

# INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2005/006795

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>SEMIZAROV D ET AL: "Specificity of short interfering RNA determined through gene expression signatures"</p> <p>PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE, WASHINGTON, DC, US, vol. 100, no. 11, 27 May 2003 (2003-05-27), pages 6347-6352, XP002316495</p> <p>ISSN: 0027-8424</p> <p>abstract</p> <p>page 6347, column 1, paragraph 1 - column 2, paragraph 3</p> <p>page 6348, column 1, paragraph 3</p> <p>page 6352, column 1, paragraph 2 - paragraph 3</p>	1-19
A	<p>-----</p> <p>SNOVE O ET AL: "Many commonly used siRNAs risk off-target activity"</p> <p>BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, ACADEMIC PRESS INC. ORLANDO, FL, US, vol. 319, no. 1, 18 June 2004 (2004-06-18), pages 256-263, XP004509877</p> <p>ISSN: 0006-291X</p> <p>abstract; table 1</p> <p>page 256, column 1, paragraph 1 - page 261, column 1, paragraph 1</p> <p>-----</p>	1-19

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2005/006795

## Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.: 35  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-19, 25-34

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 35

Present claim 35 relates to a product obtainable by the method of claim 1. Claims of products in terms of a process of manufacture are construed as products per se (PCT International Search and Preliminary Examination Guidelines, 5.26 and A5.26[1]). However, claim 35 does not comprise any technical features to define an "unknown nucleic acid" and the description does not provide support and disclosure in the sense of Article 6 and 5 PCT for any such product. This non-compliance with the substantive provisions is to such an extent that a meaningful search could not be carried out for claim 35 (Article 17(2)(a)(ii)).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-19,25-34

Method, computer program and kit for identifying sequences capable of modulating a gene of interest

---

2. claims: 20-24

Method for determining the best representative sequence in a family of sequences

---

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2005/006795

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2004038278	A1	26-02-2004	NONE	
-----				
US 2004072769	A1	15-04-2004	NONE	
-----				